NOx Budget Testing

United States Steel
Clairton Works
400 State Street
Clairton, PA 15025-1855

December 31, 2001

Mr. Bob Vollaro, MC-6204J
US Environmental Protection
Agency, Headquarters
1200 Pennsylvania Avenue
Washington, DC 20460

Ms. Linda Miller, 3 AP 11 → Chris Pilla
US Environmental Protection,
Agency, Region II
1650 Arch Street
Philadelphia, PA 19103

Mr. Joseph Nazzaro, Chief
Pennsylvania Department
of Environmental Protection
400 Market Street, 12th Floor
Harrisburg, PA 17105-8468

AFS # 42-003-00032
AP01-00
ATP#-00
DTA - 011231

RE: USS CLAIRTON WORKS
NO_x CEM SYSTEM, BOILER #1 AND BOILER #2
PART 75 CERTIFICATION TESTING

As required by 40 CFR Part 75 USS Clairton Works is submitting this letter as formal notification to conduct certification testing on the NO_x CEM system for Boiler #1 and Boiler #2.

The certification testing will be conducted in 2002 as follows:

DAHS Verification:	February 14-19
7-Day Calibration Error Test:	February 19-26
Linearity Test:	February 27
Cycle Time Test:	February 28
RATA and Bias Test:	March 11-12

Also required by Part 75, the following enclosures are included for your review:

Monitoring Plan Electronic Copy:	EPA Headquarters and email (MP-Reg3@epa.gov)
Monitoring Plan Hard Copy:	EPA Region III and PA DEP
RATA Protocol:	EPA Region III and PA DEP

Thank you for your attention in this matter. If you should have any questions please give me a call at 412-233-1114.

Sincerely,

Daniel J. Belack
Environmental Engineer

cc: W. C. Graeser (US Steel)
S. Hepler (PA DEP Pittsburgh - w/o attachments)

RECEIVED
JAN 7 2002
Air Protection Division (3AP11)

CONTINUOUS EMISSIONS NO_x MONITORING PLAN

HARD COPY as per 40 CFR Part 75.53

for

UNITED STATES STEEL CORPORATION, LLC

CLAIRTON WORKS

Boiler #1
Boiler #2

DECEMBER, 2001

Identification Of The Test Strategy

Linearity Test

- 40 CFR Part 75 Appendix A, Section 6.2
- Operate each monitor under normal conditions for temperature and pressure.
- Introduce the calibration gas at the gas injection port.
- Pass the calibration gas through the filters, scrubbers, conditioners and other monitor components used during normal sampling and through as much of the sampling probe as is possible.
- Perform at each range (low, mid and high) 3 times, but do not do any range in succession.
- For each range, use the average of the responses to determine the error in linearity using Equation A-4.

Equation A-4: $LE = \left| \frac{R-A}{R} \right| \times 100$

LE = percentage linearity error, based upon the reference value

R = reference value of low, mid or high level calibration gas introduced into the monitoring system

A= average of the monitoring system responses

7-Day Calibration Error Test

- 40 CFR Part 75 Appendix A, Section 6.3
- Perform during normal operating conditions of the boiler.
- Perform once each day for 7 consecutive operating days approximately 24 hours apart.
- Do not make manual or automatic adjustments to the monitor settings until after taking the zero and high concentration levels for that day.
- Perform the calibration error test at both the zero level and high level concentrations (the mid level range can be used in lieu of the high level range if it is more representative of stack gas concentration) as per the procedures outlined in section 5.1 of Appendix A.
- Use equation A-5 to determine the calibration error at each concentration once each day for 7 consecutive days.

Equation A-5: $CE = \left| \frac{R-A}{S} \right| \times 100$

CE = calibration error

R = reference value of zero or upscale (high level or mid level, as applicable) calibration gas introduced into the monitoring system

A = actual monitoring system response to the calibration gas

S = span of the instrument, as specified in section 2 of Appendix A

Cycle Time Test

- 40 CFR Part 75 Appendix A, Section 6.4
- Perform cycle time test for each pollutant concentration monitor while the unit is operating.
- Use a zero gas and a high level gas alternately.
- Use the following procedure to determine the upscale and downscale elapsed time (reference Figure 6 Appendix A).
    1. Inject a zero level gas into the probe tip.
    2. Record the stable starting gas value and start time with the DAHS system.
    3. Allow the monitor to measure the concentration of flue gas emissions until the response stabilizes.
    4. Record the stable ending stack emissions value and the end time of the test using the DAHS system.
    5. Determine the elapsed time as the time it takes for 95 percent of the step change to be achieved between the stable starting gas value and the stable ending gas value.
    6. Inject a high level gas into the probe.
    7. Repeat steps 2-5.
- A stable value is equivalent to a reading with a change of less than 2.0 percent of the span value for 2 minutes or a reading with a change of less than 6.0 percent from the measured average concentration over 6 minutes.
- Report the slower of the two elapsed times as the cycle time for the analyzer.
- The cycle time test is acceptable for system certification if the cycle time does not exceed 15 minutes.

RATA/Bias Test

- 40 CFR Part 75 Appendix A, Section 6.5
- Perform at the normal load of the boiler.
- See the attached document for the RATA protocol.

Fuel Gas Meter Testing

- A physical calibration of each transmitter will be conducted once a quarter.
- The calibration error check will be conducted as per the DEP's Continuous Source Monitoring Manual, Revision No. 6, Quality Assurance Chapter, Section D – Periodic calibration, Part 2 – Quarterly calibration error check, Items a-d. The procedures specified in Attachment No. 2 Performance Specification 2 will be used to evaluate the calibration error check data.
- A visual inspection of each orifice plate will be conducted once a year.

Calibration Gas Levels

	NO_x (Span 0-450 ppm)	O_2 (Span 0-21%)
Zero-Level (0-20%):	0-90 ppm	0-4%
Low-Level (20-30%):	90-135 ppm	4-6%
Mid-Level (50-60%):	225-270 ppm	10-13%
High-Level (80-100%)	360-450 ppm	17-21%

Maximum Potential Concentration - MPC

(Operating data from 11/1/01 – 12/05/01)

	NO_x	O_2	F_d
Boiler #1:	400 ppm	12%	7725
Boiler #2:	375 ppm	12%	7725

Maximum Emission Rate - MER

$(1.194x10^{-7})$ x (NO_x MPC) x (F_d MPC) x (20.9/20.9-O_2 MPC) Eq. 19-1

Boiler #1: MER = $(1.194x10^{-7})$ x (400 ppm) x (7725) x (20.9/20.9-12) = 0.866 lbs/mmBtu

Boiler #2: MER = $(1.194x10^{-7})$ x (375 ppm) x (7725) x (20.9/20.9-12) = 0.812 lbs/mmBtu

Span Range

NO_x Boiler #1 (MPC=400) = (400) x (1.125) = 450 ppm

NO_x Boiler #2 (MPC=375) =(375) x (1.200) = 450 ppm

O_2 Boiler #1 and Boiler #2 = 21%

Description Of The Location For Each Monitoring Component

Reference the attached Schematic Drawings.

Analyzer Cabinet

The analyzer cabinet is located in a temperature-controlled shelter on the eighth floor of the boiler house. Contained within this shelter are the:

- NO_x Analyzer – Thermo Environmental Instruments model TECO-42H
- O_2 Analyzer – Servomex model 1400B
- Sample Conditioning Unit – Baldwin Environmental, Inc model 5210 Gas Chiller Calibration Unit
- Remote Data Logger/Controller – Environmental Systems Control model 8816

Gas Chromatograph

The ABB Process Analytics model 3100 Vista GC is located in a shelter on the first floor of the boiler house.

Data Acquisition and Handling System – DAHS

The DAHS computer is located in the control room on the third floor of the Boiler House.

Sample Probe And Line

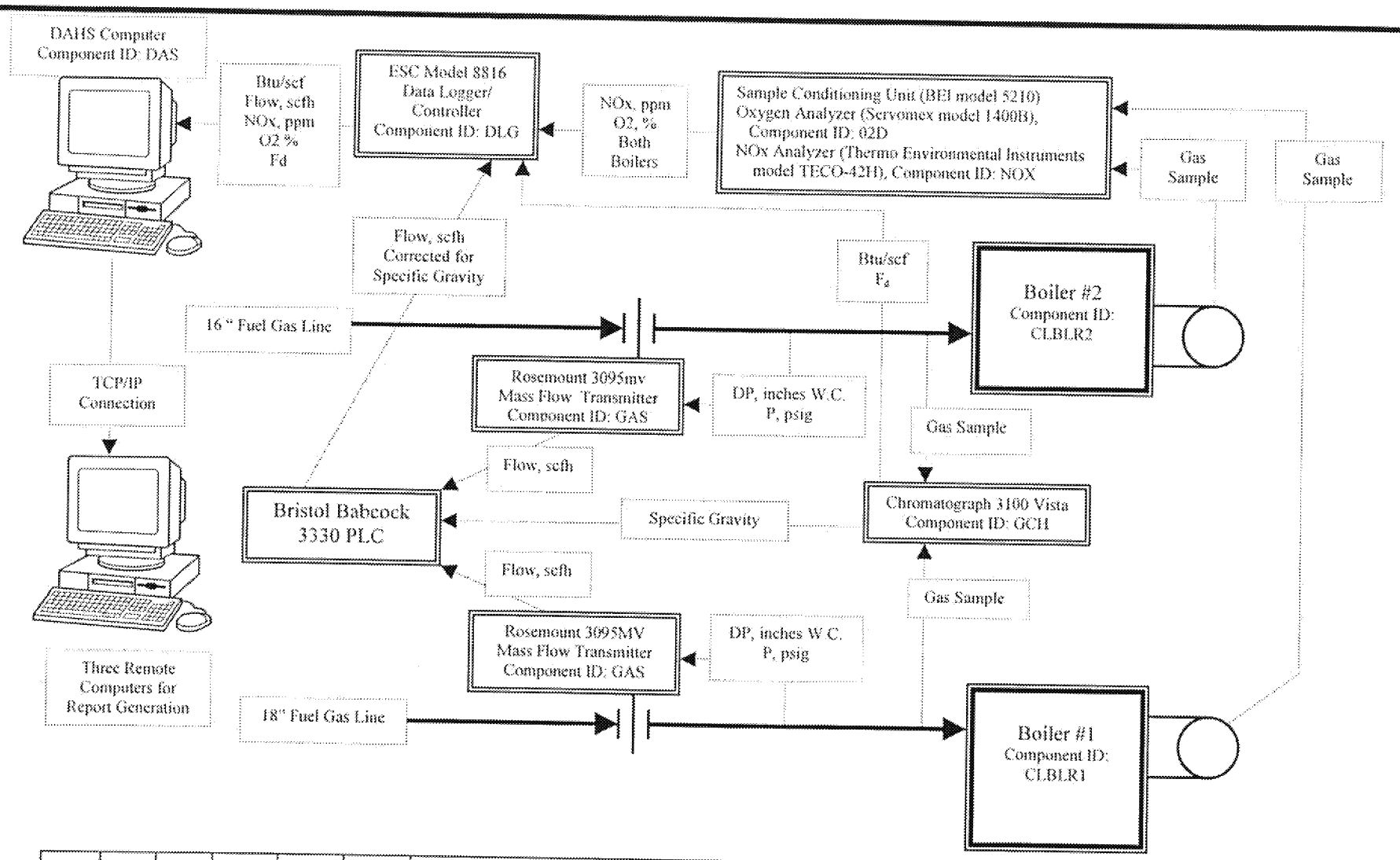
The sample probe is mounted into the stack through a flange-mounted port in the stack wall. The stack probe is connected to the sample conditioning unit and calibration control units via an insulated, electrically heated tubing bundle. The tubing bundle is attached with clamps to the supporting members of the stack and is oriented in a continual downward direction with no low spots.

Fuel Gas Meter

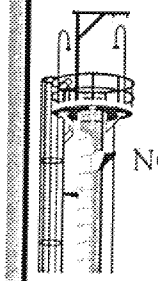
The fuel gas meters are located on the fuel gas supply pipeline on the outside of the Boiler House. The Rosemount model 3095mv mass flow transmitters are mounted on the orifice flange of the meter.

Fuel Gas Flow Computer

The Bristol-Babcock model 3330 PLC is located in the control room on the third floor of the Boiler House.



Meter Name	Type	Pipe I.D. *inches*	Orifice Bore *inches*	Design Range *mmcfd*	Normal Flow *mmcfd*	Rosemount 3095MV Transmitter Information	
						DP, Differential Pressure *inches W.C.*	P, Pipeline Pressure *psig*
Boiler #1	Orifice	17	12.075	0-45	25	Calibration: 0-50 (0-45 mmcfd) Normal: 20	Calibration: 0-20 Normal: 11 Maximum: 14 Minimum: 8
Boiler #2	Orifice	15	10.076	0-35	20	Design: 0-50 (0-35 mmcfd) Normal: 20	Calibration: 0-20 Normal: 11 Maximum: 14 Minimum: 8



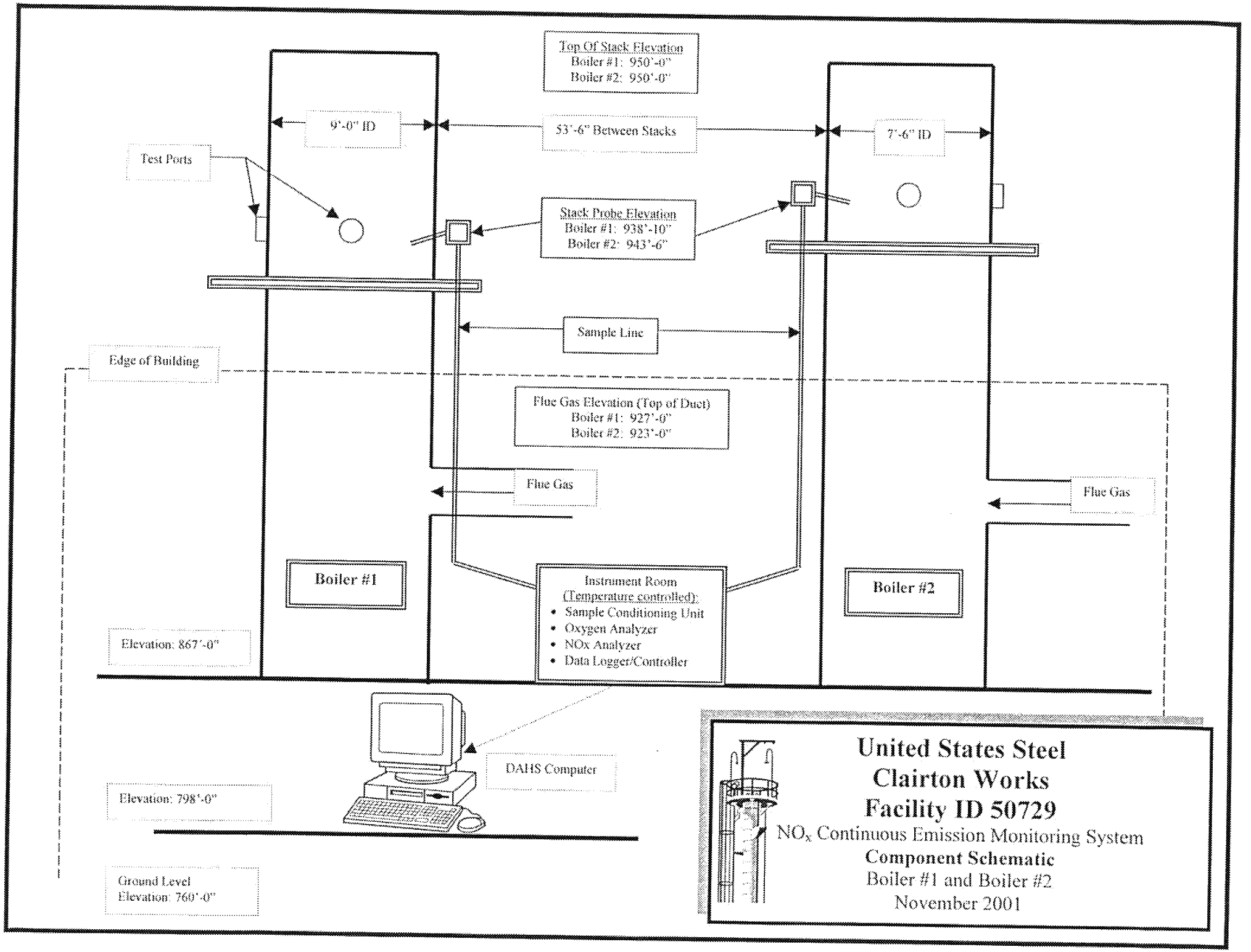
United States Steel
Clairton Works
Facility # 50729

NO_x Continuous Emission Monitoring System

Gas Flow Metering Schematic

Boiler #1 and Boiler #2

November 2001



United States Steel
Clairton Works
400 State Street
Clairton, PA 15025-1855

November 16, 2001

Director, Air and Waste Management Division
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Allegheny County Health Department
Bureau of Air Pollution Control
301 Thirty-ninth Street
Pittsburgh, PA 15201

Re: U. S. Steel Clairton Works
40 CFR 60, Subpart Y,
Standards of Performance for Coal Preparation Plants
Applicability – No. 2 Continuous Coal Unloader

Dear Sir or Madam:

During the preparation of the recent revision to Clairton Work's Title V Permit application, U. S. Steel was unable to confirm that all notifications required were submitted and/or compliance testing was conducted for the No. 2 Continuous Coal Unloader in accordance with 40 CFR 60, Subparts A, General Provisions and Subpart Y, Standards of Performance for Coal Preparation Plants.

The purpose of this correspondence is to confirm that the No. 2 Continuous Coal Unloader is subject to the provisions of 40 CFR 60, Subpart Y, Standards of Performance for Coal Preparation Plants and to satisfy all associated notification requirements per §60.7, Notifications and Recordkeeping.

This correspondence also provides notification required by §60.7(a)(6) that Clairton Works plans to conduct the required opacity readings required by §60.11, Compliance with standards and maintenance requirements, on December 20, 2001. The performance test will be conducted using the test methods per §60.254 to determine compliance with the opacity standard set forth in §60.252(c).

If you have any questions, please contact me at (412) 233-1015.

Very truly yours,

Coleen M. Davis
Environmental Control Engineer